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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	PMX 074
First Inventor or Application Identifier	Min-Chen Hsu
Title	Supporting apparatus
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

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- ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☒ Specification [Total Pages 8]
(preferred arrangement set forth below)
- Descriptive title of the invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the invention
- Brief Summary of the invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure
- ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 2]
- ☒ Oath or Declaration [Total Pages 3]
a. ☒ Newly executed (original or copy)
b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 17 completed)
[Note Box 5 below]
i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
- ☐ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

- ☐ Microfiche Computer Program (Appendix)
- ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
a. ☐ Computer Readable Copy
b. ☐ Paper Copy (identical to computer copy)
c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

- ☒ Assignment Papers (cover sheet & document(s))
- ☐ 37 C.F.R. § 3.73(b) Statement (when there is an assignee) ☒ Power of Attorney
- ☐ English Translation Document (if applicable)
- ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
- ☐ Preliminary Amendment
- ☐ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
- ☐ * Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12)
- ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
- ☐ Other:

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17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information below and in a preliminary amendment

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Signature	Winston Hsu	Date	6/8/1999	

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Supporting apparatus

BACKGROUND OF THE INVENTION

5 1. Field of the Invention

The invention relates to a supporting apparatus, and more particularly, to a supporting apparatus for supporting an electric device in a car.

10 2. Description of the Prior Art

Electrical devices used in a car, such as cellular phones, LCD televisions, and electric fans, are powered by plugging into an electric cigarette lighter. Plugs can be directly plugged into some electrical devices whereas connecting
15 devices are needed for certain other electrical devices. Electrical devices that lack a connecting device must be small but may still often seriously interfere with operation of parts of the car such as the stickshift.

20 The prior art connecting device is designed with an electrical cable, a single wire covered with plastic tube, or a spring hosepipe. The drawbacks of the prior art connecting device are as follows:

- 25 1. The connecting device with an electrical cable cannot fix the electrical device in one position, and the electrical cable is easily dislocated and damaged during use.
2. The connecting device with a single wire covered with plastic tube has a short lifespan because the single wire is unable to support heavy weight and as such is easily broken.
- 30 3. The connecting device with a spring hosepipe is unable to support heavy weight so any electrical device must be small and light.

SUMMARY OF THE INVENTION

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It is therefore a primary objective of the present

invention to provide a supporting apparatus for supporting an electric device in a car to solve the mentioned problems.

5 Briefly, in a preferred embodiment, the present invention provides a supporting apparatus for supporting an electric device in a car comprising:

- a plug having a front end and a rear end over which the front end of the plug being can be plugged into and fixed in an electric socket of the car;
- 10 a flexible steel tube having two ends fixed to the rear end of the plug and the electric device separately;
- a plurality of flexible steel wire ropes each having two ends fixed to the rear end of the plug and the electric device separately, the plurality of steel wire ropes
- 15 being positioned separately at two sides of the steel tube for strengthening the steel tube; and
- an electric wire installed in the steel tube for electrically connecting the electric device to the plug;
- 20 wherein when an user bends or rotates the supporting apparatus, the steel tube and steel wire ropes of the supporting apparatus will be flexibly bent or rotated and the electric device will be approximately maintained at the bent or rotated position.

25 It is an advantage of the present invention that the supporting apparatus according to the present invention has a steel tube with a steel wire rope support so the electrical device can be approximately maintained at the bent or rotated position.

30

These and other objects and the advantages of the present invention will no doubt become obvious to those of ordinary skill in the art after having read the following detailed description of the preferred

35 embodiment that is illustrated in the various figures and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig.1 is an outside view of a supporting apparatus according to the present invention.

Fig.2 is a perspective diagram of the supporting apparatus
5 in Fig.1.

Fig.3 is a sectional diagram of the supporting apparatus along a line 3-3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

10

Please refer to Fig.1. Fig.1 is an outside view of a supporting apparatus 10 according to the present invention. The supporting apparatus 10 supports an electric device 11 in a car and comprises a plug 12 the front end of which can
15 be plugged into the electric cigarette lighter (not shown) of the car, and a plastic cover 20 made of flexible plastic material for protecting the internal components.

Please refer to Fig.2 and Fig.3. Fig.2 is a perspective
20 diagram of the supporting apparatus 10 in Fig.1. Fig.3 is a sectional diagram of the supporting apparatus 10 along a line 3-3. The supporting apparatus 10 further comprises a flexible steel tube 14, two flexible steel wire ropes 16, and an electric wire 18. The flexible steel tube 14 has two ends one
25 of which is fixed to the rear end of the plug 12 and the other of which is fixed to the electric device 11. Each of the flexible steel wire ropes 16 has two ends one of which is fixed to the rear end of the plug 12 and the other of which is fixed to the electric device 11. The two steel wire ropes 16 are
30 symmetrically installed at two sides of the steel tube 14 and strengthen the steel tube 14. The electric wire 18 is installed in the steel tube 14 for electrically connecting the electric device 11 to the plug 12. When the supporting apparatus 10, the steel tube 14, steel wire ropes 16 and plastic cover 20
35 is flexibly bent or rotated, the electric device 11 will be approximately maintained at the bent or rotated position.

The supporting apparatus 10 further comprises a rigid plastic head piece 22, an L-shaped metal piece 24, and a metal piece 26. The rigid plastic head piece 22 is integrally built at the end of the steel tube 14 and steel wire ropes 16 near the plug 12 for fastening the steel tube 14 and steel wire ropes 16 together. The L-shaped metal piece 24 is embedded in a plastic housing of the electric device 11. The L-shaped metal piece 24 comprises a first plate and a second plate which are perpendicular to each other. The first plate comprises three holes for allowing one end of the steel tube 14 and steel wire ropes 16 to pass through and become embedded in the plastic housing of the electric device 11. The metal piece 26 is used for fixing the steel tube 14 and steel wire ropes 16 to the second plate of the L-shaped metal piece 24 and prevents loosening of the steel tube 14 and steel wire ropes 16.

Each of the steel wire ropes 16 is formed by a combination of seven stainless steel wires with a total diameter of about 0.8mm. The two steel wire ropes 16 are symmetrically installed at two sides of the steel tube 14. The plastic cover 20 is made of flexible plastic material and is formed directly outside the steel tube 14 and steel wire ropes 16. The supporting apparatus 10 can be bent 180 degrees over a thousand times, then fixed at any position. It therefore has a long lifespan.

The supporting apparatus 10 can be a connecting device that connects a cellular phone to an electrical socket of the cigarette lighter at a particular angle within a predetermined range. The cellular phone can be adjusted so that it does not interfere with the gear shifting mechanism of the car. The angle between the microphone and speaker can also be adjusted.

The supporting apparatus 10 has a steel tube 14 and supporting steel wire ropes 16 such that the electrical device

can be approximately maintained at the bent or rotated position. The supporting apparatus 10 connects the electrical device to the electric socket and has a long lifespan.

5 Those skilled in the art will readily observe that numerous modifications and alterations of the propeller may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and
10 bounds of the appended claims.

CLAIMS

What is claimed is:

- 5 1. A supporting apparatus for supporting an electric device in a car comprising:
 - a plug having a front end and a rear end over which the front end of the plug being can be plugged into and fixed in an electric socket of the car;
 - 10 a flexible steel tube having two ends fixed to the rear end of the plug and the electric device separately;
 - a plurality of flexible steel wire ropes each having two ends fixed to the rear end of the plug and the electric device separately, the plurality of steel wire ropes being positioned separately at two sides of the steel tube for strengthening the steel tube; and
 - 15 an electric wire installed in the steel tube for electrically connecting the electric device to the plug;
 - 20 wherein when an user bends or rotates the supporting apparatus, the steel tube and steel wire ropes of the supporting apparatus will be flexibly bent or rotated and the electric device will be approximately maintained at the bent or rotated position.
 - 25
2. The supporting apparatus of claim 1 further comprising a plastic cover covered on the steel tube and steel wire ropes for protecting the steel tube and steel wire ropes.
- 30 3. The supporting apparatus of claim 2 wherein the plastic cover is made of flexible plastic material and is formed directly outside the steel tube and steel wire ropes.
- 35 4. The supporting apparatus of claim 1 wherein a plurality of steel wire ropes are symmetrically installed at two sides of the steel tube for strengthening the steel tube.

5. The supporting apparatus of claim 1 comprising two steel wire ropes symmetrically installed at two sides of the steel tube for strengthening the steel tube.
- 5 6. The supporting apparatus of claim 1 further comprising a rigid plastic head piece integrally built at one ends of the steel tube and steel wire ropes near the plug for fastening the steel tube and steel wire ropes together.
- 10 7. The supporting apparatus of claim 1 further comprising a L-shaped metal piece embedded in a plastic housing of the electric device wherein the L-shaped metal piece comprises a first plate and a second plate perpendicular to each other and the first plate comprises a plurality of holes for allowing one ends of the steel tube and steel wire ropes to pass through and embedded in the plastic housing of the electric device.
- 15 8. The supporting apparatus of claim 7 further comprising a metal piece for fixing the steel tube and steel wire ropes to the second plate of the L-shaped metal piece to prevent the steel tube and steel wire ropes from loosing.
- 20 9. The supporting apparatus of claim 1 wherein the electric socket of the car is also used for connecting an electric cigarette lighter.
- 25 10. The supporting apparatus of claim 1 wherein each of the steel wire ropes is formed by combining a plurality of stainless steel wires together.
- 30

ABSTRACT OF THE DISCLOSURE

The invention relates to a supporting apparatus for supporting an electric device in a car. The supporting apparatus comprises a plug having a front end and a rear end over which the front end of the plug being can be plugged into and fixed in an electric socket of the car, a flexible steel tube having two ends fixed to the rear end of the plug and the electric device separately, a plurality of flexible steel wire ropes each having two ends fixed to the rear end of the plug and the electric device separately, the plurality of steel wire ropes being positioned separately at two sides of the steel tube for strengthening the steel tube, and an electric wire installed in the steel tube for electrically connecting the electric device to the plug. When a user bends or rotates the supporting apparatus, the steel tube and steel wire ropes of the supporting apparatus will be flexibly bent or rotated and the electric device will be approximately maintained at the bent or rotated position.

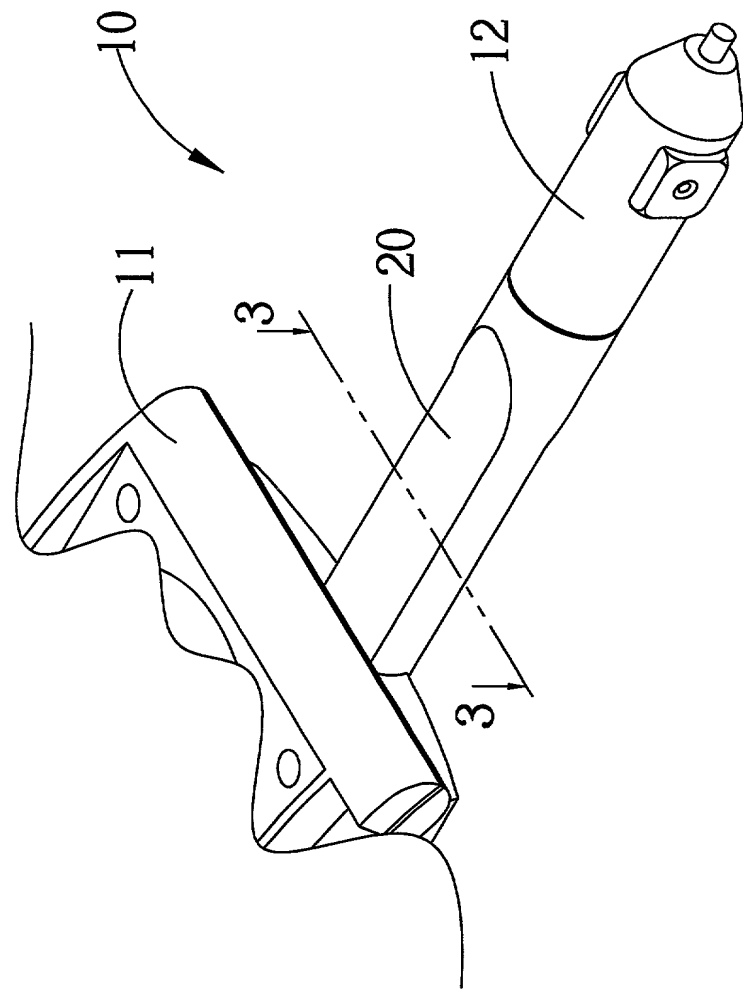


Fig. 1

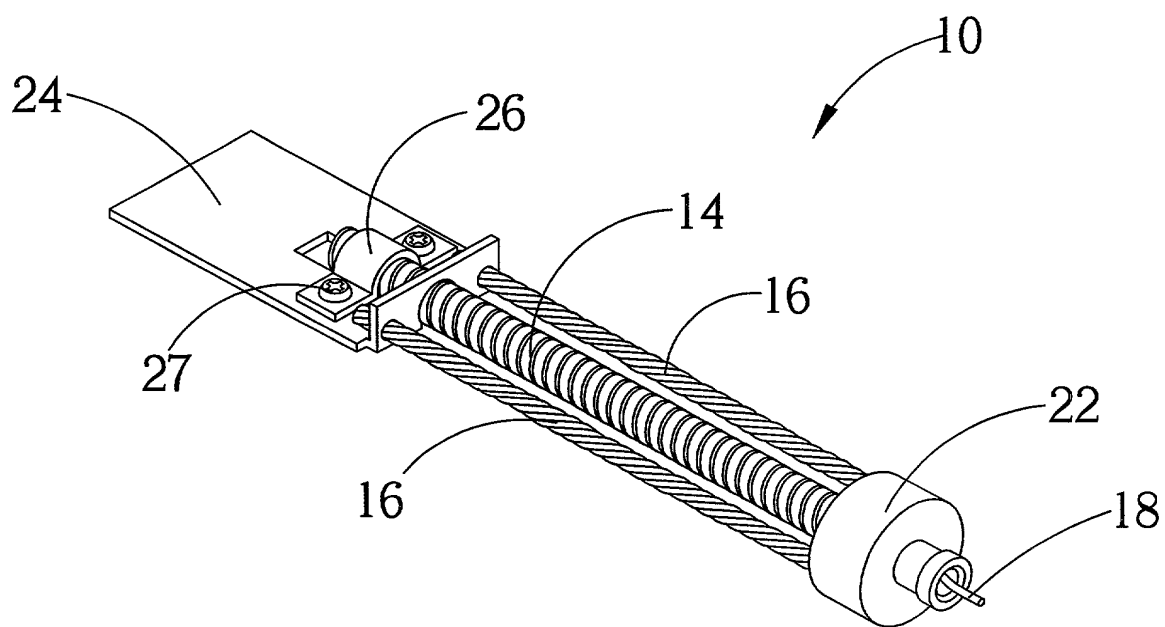


Fig. 2

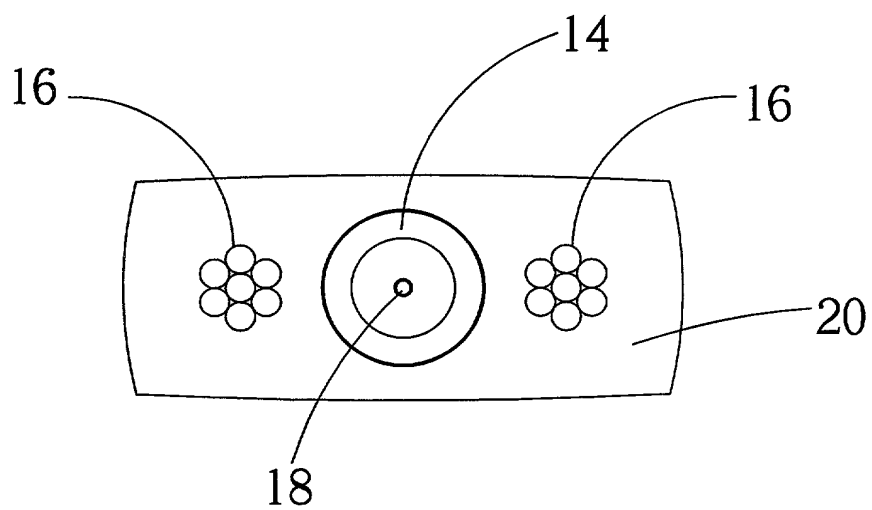


Fig. 3

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

I believe I am the sole (if only one name appears below), or a joint (if more than one name appears), original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

" Supporting apparatus. "

+ The specification for the above entitled invention is filed herewith.

 The specification for the above entitled invention was filed previously with application serial number: Filing Date:

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the invention disclosed in this application in accordance with Title 37, Code of Federal Regulations, Section 1.56 (a). I further acknowledge the duty in any continuation-in-part application to disclose to the Patent and Trademark Office all information known to be material to the patentability of the invention disclosed in this application, as defined in 1.56, which became available to me between the filing date of the prior application and the filing date of this application.

PRIORITY CLAIM

 There is no claim of priority.

+ Claim of priority is based on the following:

Filing Date= 04/09/1999
Filing No.= 88105634

POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney to prosecute this application and to transact all related business in the Patent and Trademark Office:

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DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued hereon.

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DECLARATION — Supplemental Priority Data Sheet

Additional foreign applications:

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
88105634	Taiwan, R.O.C.	04/09/99	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Additional provisional applications:

Application Number	Filing Date (MM/DD/YYYY)

Additional U.S. applications:

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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